

INTERNATIONAL SEARCH REPORT

 International application No
 PCT/JP2005/017917

A CLASSIFICATION OF SUBJECT MATTER		
Int Cl <i>H05K3/34</i> (2006. 01), <i>H05K1/18</i> (2006. 01), <i>H01M2/10</i> (2006. 01)		
According to International Patent Classification (IPC) or to both national classification and IPC		
B FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Int Cl <i>H05K3/34</i> (2006. 01), <i>H05K1/18</i> (2006. 01), <i>H01M2/10</i> (2006. 01)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Published examined utility model applications of Japan 1922-1996 Published unexamined utility model applications of Japan 1971-2005 Registered utility model specifications of Japan 1996-2005 Published registered utility model applications of Japan 1994-2005		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	JP 2002-100412 A (MITSUMI ELECTRIC CO., LTD.) 2002.04.05, par. Nos. [0008] , [0009] , fig. 1, (Family: None)	1-24
Y	JP 4-192596 A (HITACHI, LTD.) 1992.07.10, page 6, lower right column, line 19 - page 7, upper left column, line 18, fig. 13, fig. 14, & US 5421081 A1 (1995.06.06)	1-10, 17, 19-21
Y	JP 10-56257 A (ROHM CO., LTD.) 1998.02.24, par. Nos. [0029] - [0031] , [0041] , fig. 13, & US 6175086 B1 (2001.01.16) & EP 907308 A1 (1999.04.07) & WO 1997/046059 A1 (1997.12.04) & CN 1220077 A (1999.06.16)	4-24
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C J See patent family annex		
* Special categories of cited documents "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "g" document member of the same patent family		
Date of the actual completion of the international search 06.12.2005		Date of mailing of the international search report 20.12.2005
Name and mailing address of the ISA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer NAGAYA Yojiro Telephone No +81-3-3581-1 101 Ext. 3391

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	JP 2004-304019 A (MITSUMI ELECTRIC CO., LTD.) 2004.10.28, par. Nos . [0005] - [0008] , [0020] , [0025] , [0026] , fig. 3 , fig. 4 , (Family: None)	11-16, 18, 22-24

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims NOS.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

- 3- C Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The "special technical features" of claims 1-10, 17, 19-21 relate to a through-hole being formed in base substrate such that said through-hole penetrates through land and through said substrate, and said through-hole being filled with a solder such that solder in said through-hole extends in continuation to solder layer connecting metal plate to said land, while the "special technical features" of claims 11-16, 18, 22-24 relate to a solder resist layer covering a peripheral edge part of land such that said solder resist layer extends in continuation to a part of surface of base substrate surrounding said land. There is no technical relationship among those inventions involving one or more of the same or corresponding technical features. Therefore, these groups of inventions are not so linked as to form a single general inventive concept.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ NO required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ NO protest accompanied the payment of additional search fees.